



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
PO Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/531,285	03/20/2000	Yu Chen	52779USA1B	5641

32692 7590 07/25/2003

3M INNOVATIVE PROPERTIES COMPANY  
PO BOX 33427  
ST. PAUL, MN 55133-3427

[REDACTED] EXAMINER

VIGUSHIN, JOHN B

ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 07/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/531,285	CHEN ET AL.
	<b>Examiner</b> John B. Vigushin	<b>Art Unit</b> 2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 02 July 2001.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 37-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 37 is/are allowed.
- 6) Claim(s) 38-42 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on 02 July 2001 is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a)  The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                               | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)           | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ .                                   |

## DETAILED ACTION

1. The present Office Action is responsive to Applicant's Amendment filed July 02, 2001 (Certificate of Mailing date: June 28, 2001). The Examiner acknowledges the amendments to the Drawings and Specification.

### Rejections Based On Prior Art

2. Abolafia et al. (US 3,795,047) was relied upon for the rejections hereinbelow and has already been made of record in the Examiner's previous Non-Final Office Action of January 11, 2001 (see p.9, section 13 and PTO-Form 892 from said previous Office Action).

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 38-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Abolafia et al.

As to Claim 38, Abolafia et al. discloses, in Figs. 2, 3 and 4, an electronic circuit element 10c comprising: a first insulating layer 11 (col.3: 31-32) having at least one surface (i.e., the upper surface), at least a portion of the surface defining a first surface plane; at least one conductor 13 along at least a portion of the at least one surface; a

conducting member 18 in communication with the at least one conductor 13, the conducting member (spherical particle 18) protruding to an apex at a first level, the first level beyond the first surface plane (Fig. 4), the conducting member 18 including a surface (i.e., the surface of the sphere); the surface of the insulating layer 11, the at least one conductor 13, and the surface of the conducting member 18, defining a major surface of a predetermined shape; a second insulating layer 17 along at least a portion of the major surface (col.4: 22-23 and 32-38) whereby at least a portion of the conducting member 18 remains exposed (Fig. 4); the second insulating layer 17 including portions extending laterally from the conducting member 18 along the first insulating layer 11 (Figs. 2 and 4; col.4: 32-38); the laterally extending portion extending from the first surface plane to a second level, the second level less than the first level (Fig. 4) wherein the second insulating layer 17 includes an adhesive, i.e., an epoxy, which is a thermosetting adhesive (col.4: 22-23 and 32-44). [Examiner's Note: The layer of epoxy 17, which is a thermosetting adhesive, functions to join circuit elements (circuit cards) 10b and 10c together (Figs. 4 and 5; col.4: 32-44) and is identified as one of the adhesive materials contemplated by the Applicant on p.8, lines 27-31 of Applicant's own disclosure].

As to Claim 39, Abolafia et al. further discloses that the exposed portion of conducting member 18 is proximate the apex (Fig. 4).

As to Claim 40, Abolafia et al. further discloses that the exposed portion of conducting member 18 includes the surface of the conductive member 18 (Fig. 4).

As to Claim 41, Abolafia et al. further discloses that at least a portion of the second insulating layer 17 conforms to the predetermined shape of the major surface (Figs. 2 and 4).

As to Claim 42, Abolafia et al. further discloses that the laterally extending portions of the second insulating layer 17 extend from the first surface plane to a second plane at the second level (Figs. 2 and 4).

### ***Response to Arguments***

5. Applicant's arguments, see Applicant's above-mentioned Amendment, filed July 02, 2001, with respect to the rejection(s) of claim(s) 37-42 under 35 USC § 102(e) over Somaki et al. (US 5,641,113) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Abolafia et al. (US 3,795,047).

### ***Allowable Subject Matter***

6. Claim 37 has been allowed.
7. The following is a statement of reasons for the indication of allowable subject matter:

As to Claim 37, patentability resides in ***the combination of the second insulating layer including an adhesive and removing at least a portion of the second insulating layer proximate the apex of the conducting member,*** in combination with the other limitations of the claim.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Vigushin whose telephone number is 703-308-1205. The examiner can normally be reached on 8:30AM-5:00PM Mo-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



John B. Vigushin  
Examiner  
Art Unit 2827

jbv  
July 17, 2003